

Moab Project

**Moab Project Site
Fugitive Dust Control Plan**

March 2002

Prepared for
U.S. Department of Energy
Idaho Operations Office
Grand Junction Office

Work Performed Under DOE Contract Number DE-AC13-96GJ87335
Task Order Number MAC02-16

Contents

1.0 Introduction	1
1.1 Site Location	1
1.2 Site History	1
1.3 Climatology	2
1.4 Regulatory Requirements	2
1.5 Environmental Monitoring	7
2.0 Site Source Information	9
2.1 Site Ownership and Physical Location	9
2.2 Source Information	9
3.0 Description of Fugitive Dust Emission Activities	13
4.0 Description of Fugitive Dust Emission Controls On-Site	15
4.1 High Potential Source Areas	15
4.2 Moderate Potential Source Areas	15
4.3 Low Potential Source Areas	15
4.4 Standards, Action Levels, and Response Actions	16
4.5 Best Management Practices	17
5.0 Description of Fugitive Dust Emission Controls Off-Site	21
6.0 References	23

Figures

Figure 1. Area Location Map for the Moab Site	3
Figure 2. Site Features Map for the Moab Site	5
Figure 3. Location Map for the Moab Site Fugitive Dust Sources	11
Figure 4. Air Particulate Monitoring Locations	19

Tables

Table 1. Summary of Fugitive Dust Controls for the Moab Site	16
Table 2. Fugitive Dust Standards, Action Levels, and Response Actions	17

Appendix A Material Safety Data Sheets

End of current text

1.0 Introduction

The State of Utah, Division of Air Quality rules for the control of fugitive dust and emissions require that all sources whose activities or equipment have the potential to produce fugitive or airborne dust, must prepare and implement a Fugitive Dust Control Plan. Accordingly, this Fugitive Dust Control Plan (Plan) is prepared to address the control of fugitive and airborne dust emissions from the Moab Project Site (Moab Site) located in Moab, Utah. Specifically, this Plan complies with the State of Utah rules for controlling fugitive dust emissions as specified in the Utah Administrative Code (U.A.C.) R307-205, *Emission Standards; Fugitive Emissions and Fugitive Dust*. This Plan has been prepared to address activities and operations conducted by the U.S. Department of Energy's Grand Junction Office (DOE-GJO) at the Moab Site. The primary objective of this plan is to formulate a strategy for controlling, to the greatest extent practicable, fugitive or airborne dust emissions at the Moab Site. This will be accomplished by identifying specific sources and activities which have the highest potential to produce or generate fugitive or airborne dust emissions. This plan describes the engineering controls necessary to minimize and control dust emissions from those sources and activities. This plan is prepared to address the control of fugitive dust emissions at the Moab site which are a result of current DOE activities. As necessary, the scope of this plan will be revised to reflect changes in DOE's dust control strategy as site conditions or activities may change in the future.

1.1 Site Location

The Moab Site is a former uranium-ore-processing facility located approximately 3 miles northwest of the city of Moab in Grand County, Utah (Figure 1). The Moab Site is irregularly shaped; a uranium mill tailings pile occupies much of the western portion of the site. The Moab Site is bordered on the north and southwest by steep sandstone cliffs. The Colorado River forms the southeastern boundary of the site. U.S. Highway 191 parallels the northern site boundary, and State Highway 279 crosses the western portion of the property. Arches National Park is located adjacent to the northern site boundary, and Canyonlands National Park is located approximately 12 miles to the southwest. The Union Pacific Railroad traverses a small section of the site just west of Highway 279, then enters a tunnel and emerges several miles to the southwest. Moab Wash runs in a southeasterly direction through the center of the site and joins with the Colorado River. The wash is an ephemeral stream that flows only after precipitation or during snowmelt. The entire site covers approximately 400 acres of which 130 acres are covered by the tailings pile. Figure 2 shows the major physiographic features of the Moab Site.

1.2 Site History

Originally, the property and facility were owned by the Uranium Reduction Company (URC) and were regulated by the Atomic Energy Commission, predecessor agency to DOE. In 1956, URC began operation of the Moab mill. In 1962, the Atlas Minerals Corporation acquired URC and operated the mill until operations ceased in 1984. Between 1956 and 1984, uranium mill tailings were disposed of on site in an unlined impoundment. Decommissioning of the mill began in 1988; between 1989 and 1995, an interim cover was placed on the impoundment. In 1996, Atlas proposed to reclaim the tailings pile for permanent disposal in its current location. However, Atlas declared bankruptcy in 1998, and subsequently, the U.S. Nuclear Regulatory Commission (NRC) appointed Pricewaterhouse Coopers (PwC) as the trustee of the Moab Mill Reclamation Trust and licensee for the site. Ownership and responsibility of the Moab Site was effectively transferred from PwC to DOE by passage of the Floyd D. Spence National Defense

Authorization Act (H.R. 5408, 2001). This act further designates that the Moab Site undergo remediation in accordance with Title I of the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA; 42 U.S.C. 7912) (as amended). The DOE-GJO took possession of the Moab Site on October 24, 2001.

1.3 Climatology

The climate of the Moab region is semiarid. Average annual temperature is approximately 14 degrees Celsius (°C) (57 degrees Fahrenheit [°F]). January is the coldest month, averaging -1°C (30°F), and July is the warmest month, averaging 28°C (82°F). Extreme temperatures have ranged from -28°C (-18°F) in January 1963 to 44°C (111°F), which has occurred more than once (in July 1953 and on earlier occasions). Temperatures of 32°C (90°F) or higher occur about 100 days per year, with about 80 percent of those occurring during June, July, and August. Temperatures below freezing 0°C (32°F) occur on the average of 123 days of the year with about 80 percent of those occurring during November through February. The effects of high temperature on human comfort are moderated by the low relative humidity, which is often less than 50 percent during the daytime hours.

Average annual precipitation at Moab is 20 centimeters (cm) (8 inches), distributed approximately equally among the seasons with slight peaks during the spring and fall. Potential evapotranspiration (about 127 cm [50 inches] per year) greatly exceeds annual precipitation. Mean pan evaporation (about 140 cm [55 inches] per year) and lake evaporation (about 97 cm [38 inches] per year) also greatly exceeds the total annual precipitation.

Low humidity in the region limits fog occurrences (visibility less than 0.5 kilometer [km] [0.3 mi]) to fewer than 10 days per year. Thunderstorms occur about 40 days per year. Hail occurs approximately 3 days per year.

Prevailing winds in the Moab region are southeasterly. Cold air drainage at the Moab Site can occur from the northwest under very stable conditions. The probability of a tornado is very small. One tornado with wind speeds of 160 km/hour (hr) (100 miles/hr) would be expected only once in approximately 100,000 years (NRC 2001).

1.4 Regulatory Requirements

This Fugitive Dust Control Plan is prepared in response to State of Utah, Division of Air of Quality regulations for the control of fugitive dust, as found in Section R307-205 (U.A.C., September 2001). Dust control plans are required to minimize fugitive dust on-site from various types of pits, yards, and storage areas. The Fugitive Dust Rule (R307 - 309 U.A.C.) also addresses storage and handling of aggregate materials, construction / demolition activities, mining activities, and tailings piles and ponds. The portion of the Fugitive Dust Rule that specifically applies to the Moab Site is found at R307-205-6(1-2), and requires that "... any person owning or operating an existing tailings operation where fugitive dust results from grading, excavating, depositing, or natural erosion or other causes in association with such operation shall take steps to minimize fugitive dust from such activities." This site specific Fugitive Dust Control Plan will be submitted to the Executive Secretary for the Utah Air Quality Board in Salt Lake City, Utah, for approval, and will be updated and revised as necessary to reflect dust controls which correspond to current and on-going site activities and operations.

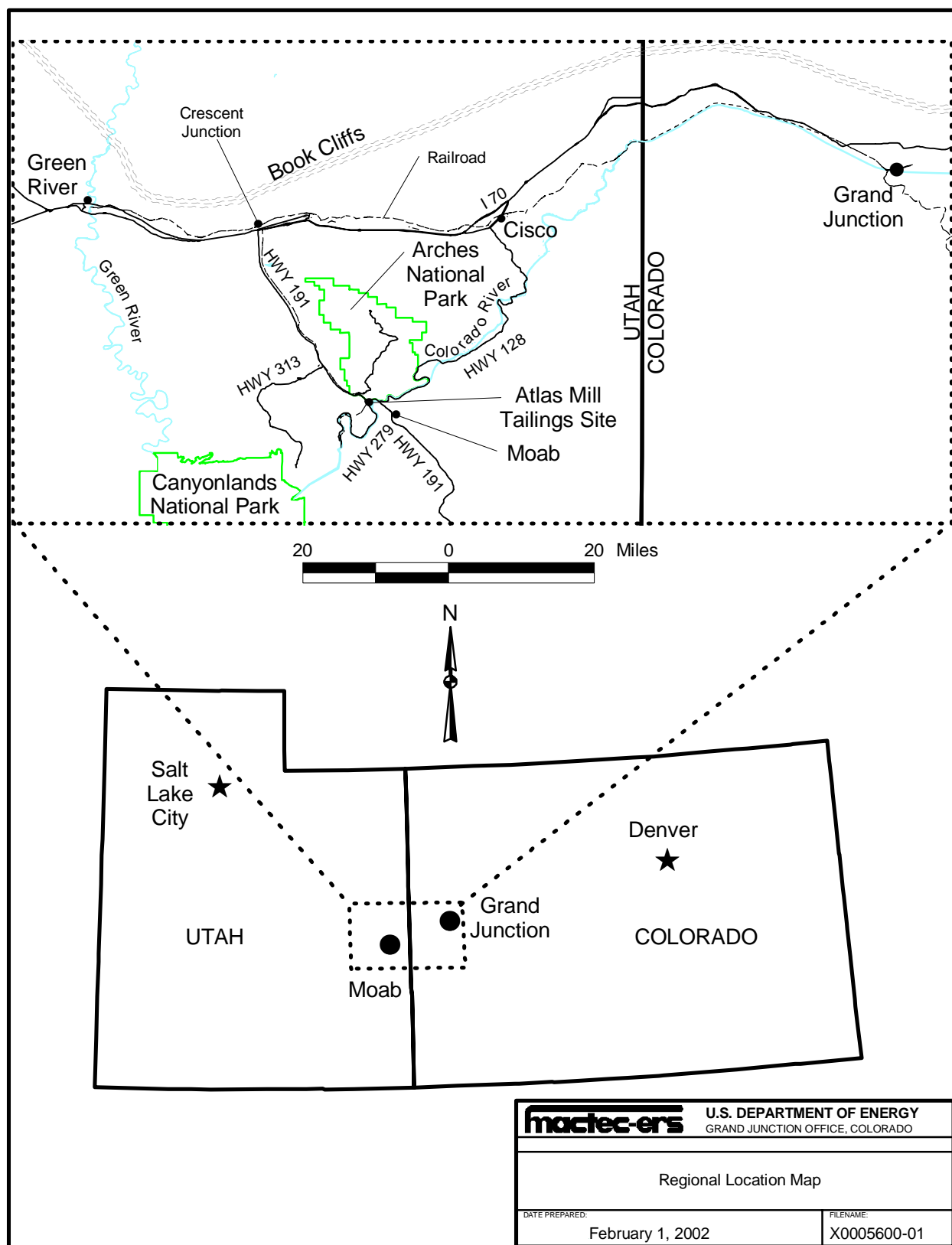


Figure 1. Area Location Map for the Moab Site

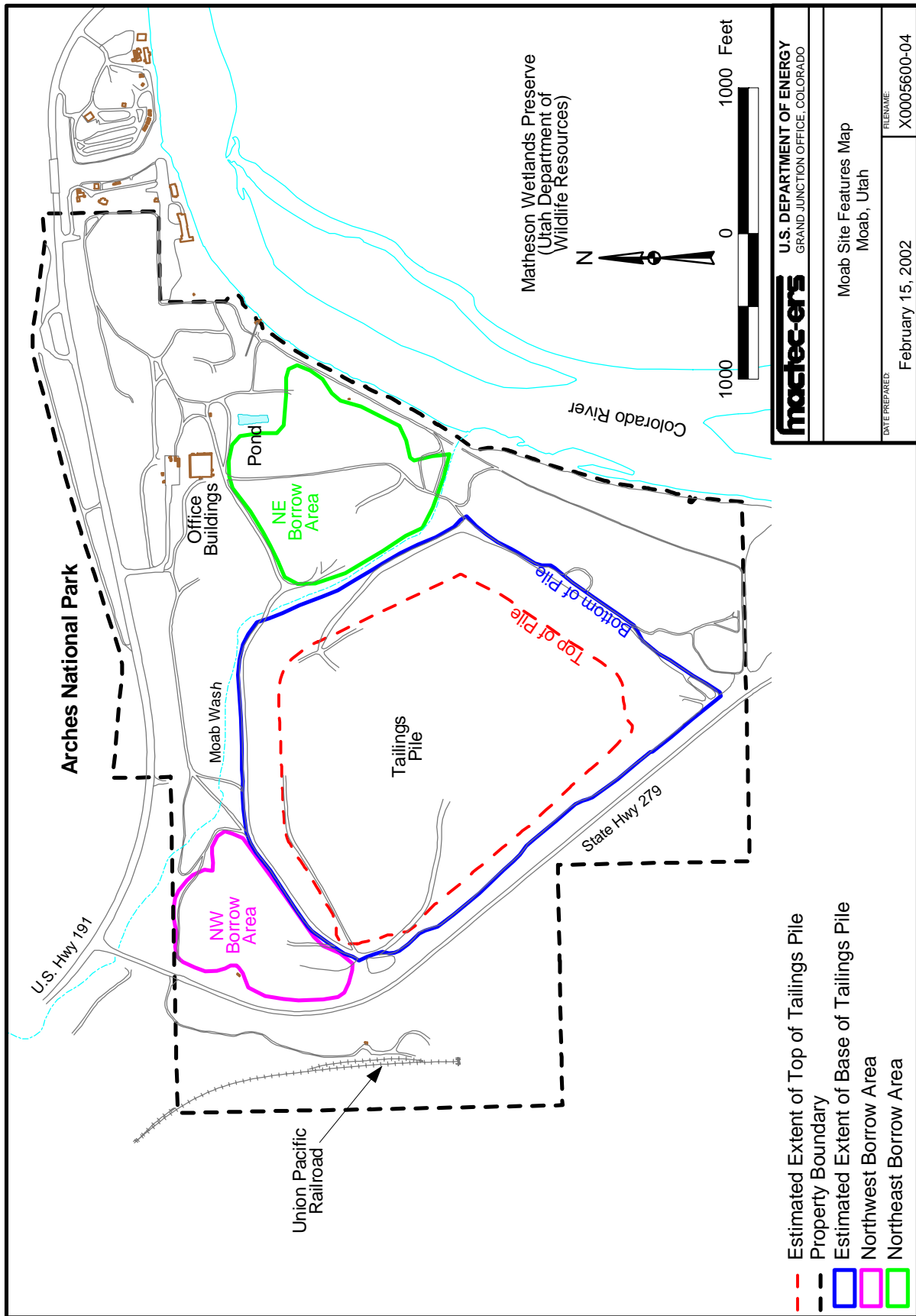


Figure 2. Site Features Map for the Moab Site

1.5 Environmental Monitoring

In addition to the implementation of physical dust controls, the DOE-GJO has developed and implemented an environmental air monitoring program for the Moab Site. This environmental air monitoring program consists of sampling airborne particulates, radon, and direct gamma radiation at various locations along the site perimeter and at various off-site locations.

Background monitoring locations also have been established to provide ambient air quality data. The background or ambient air quality data will be compared to air quality data collected from the on-site monitoring locations, for the purposes of determining compliance with various DOE Orders, and Federal and State air quality regulations.

As part of DOE's environmental air monitoring and fugitive dust control strategy, a meteorological monitoring station has been established at the Moab Site. Wind speed and wind direction data collected from this monitoring station will be used to determine when site-specific action levels have been exceeded and specific dust controls (e.g., the application of dust suppression techniques) must be initiated. In addition, personnel certified in reading opacity measurements in the State of Utah will also be used to determine when active dust control measures should be initiated, and when specific dust generating activities (i.e., excavating, hauling, grading, etc.) should be discontinued.

In addition to complying with the State of Utah Fugitive Dust Rule, this Fugitive Dust Plan is consistent with the intent of complying with various DOE Orders. U.S. Department of Energy (DOE) Order 5400.1, *General Environmental Protection Program*, specifies that effluent monitoring and environmental surveillance be conducted to determine the effect of DOE activities upon "...on-site and offsite environmental and natural resources," and to "...verify compliance with applicable Federal, State, and local effluent regulations and DOE Orders." Similarly, DOE Order 5400.5, *Radiation Protection of the Public and the Environment*, requires that DOE control and monitor radiological exposures from its facilities and activities.

The physical form of the radioactive contaminants (i.e., uranium mill tailings) at the Moab Site is primarily best described as a fine-grained, sand-like material, which is highly susceptible to wind erosion. Consequently, one of DOE's major objectives at the Moab Site is to control and contain the off-site transportation of radiological contaminants resulting from the erosive forces of wind and storm water. This Fugitive Dust Control Plan outlines DOE's strategy for controlling airborne dust emissions and minimizing/controlling the off-site transport of mill tailings resulting from wind erosion.

2.0 Site Source Information

2.1 Site Ownership and Physical Location

As required by the Utah Division of Air Quality, the following site-specific source information is provided:

- 1) **Name of Operation**—Moab Site Project, formerly known as the Atlas Mining Corporation Uranium Mill.
- 2) **Owner/Operator Information**—U.S. Department of Energy, Grand Junction Office. 2597 B3/4 Road, Grand Junction, Colorado, 81503. DOE Contact: Joel Berwick (970) 248-6020. On-Site Contact: Irwin Stewart (435) 259- 5131.
- 3) **Physical Address of Operations**—1871 N. Highway 191, Moab, Utah, 84532.
- 4) **UTM Coordinates or Longitude/Latitude of Operations:**
 - Latitude:** 38 degrees, 36 minutes, 17.53329 seconds - North
 - Longitude:** 109 degrees, 35 minutes, 23.47893 seconds - West
 - Elevation:** 3977.624 US feet above MSL

2.2 Source Information

Type of Material Processed or Disturbed—The materials of concern with respect to fugitive dust emissions at the Moab Site are residual uranium mill tailings and unstable native soils/sand. Although the former Atlas mill is no longer active, a total of approximately 11.8 million tons of uranium mill tailings and surface contaminated soils remain on site. The majority of the mill tailings are contained within an on-site tailings pile, the footprint of which covers approximately 136 acres. An interim cover of the tailings pile was completed in 1995. Soils from on-site borrow areas were used as the source of material for the temporary cover. Some of the soils used for the cover are contaminated with low-level residual radioactive contamination resulting from previous milling activities conducted at the site. A portion of the cover was seeded in 1999; however, presently, there is no established vegetative growth on the cell.

The majority of materials on the surface of the tailings pile consist of poorly consolidated soils, and therefore is considered to be a "high-potential" source of fugitive dust emissions at the Moab Site. Similarly, the two on-site borrow areas (i.e., the north west and the north east borrow areas) are essentially void of any plant or vegetation cover; the soils are poorly consolidated, and are considered to be major sources for fugitive dust emissions at the Moab Site (Figure 3). Combined, the tailings pile and the two borrow areas comprise approximately 40 percent of the total land surface of the Moab Site. The remainder of site is not considered to be a significant source of fugitive dust emissions due to: 1) The low level of past disturbances in these areas; 2) The low levels and quantity of contaminated soils identified within these areas; 3) The low levels of anticipated activity occurring in these areas; and, 4) A greater percentage of vegetative cover present within these areas.

Source areas identified as a "moderate-potential" consist of areas that have been partially disturbed in the past (approximately 20 percent of the total site area); however, soils and surface sediments in these areas are typically better consolidated and are more stable due to varying degrees of vegetative cover. If these areas prove to be a source for fugitive dust emissions in the future, appropriate control measures will be implemented.

Most of the "low-potential" areas are found along the site perimeter and consist of steep, rocky terrain (i.e., sandstone slopes and cliffs) in the west, and wetland/river bottom areas along the south and eastern margins of the site boundary. Typically, there is little to no activity occurring or planned in these areas, nor have these areas been disturbed by past milling activities. The "low-potential" areas comprise approximately 40 percent of the total site area. Consequently, DOE does not anticipate that these areas will be a significant source of dust emissions from the facility, and no controls are planned for these areas.

Length/Duration of Construction Project—The DOE is in the process of evaluating remedial action alternatives for the mill tailings currently stockpiled at the Moab Site. Depending upon which remedial action alternative is ultimately selected, DOE's responsibility for monitoring and controlling fugitive dust emissions from this site will range in duration from approximately three to eleven years.

Description of Processes/Site Activities—Currently, the activities occurring at the Moab Site include: 1) Site characterization (including radiological assessments, surveying, environmental sampling and monitoring, biological surveys, etc.); 2) Site stabilization (securing unsafe conditions/structures/utilities); 3) Implementing fugitive dust and storm water controls; 4) Waste management activities (cleaning up oil spills, consolidating drums and petroleum products, addressing excess chemical inventory, etc.); 5) Site security (fence installation/repair, postings, barricades, etc.); and, 6) Installation of a Construction Office and an equipment staging area.

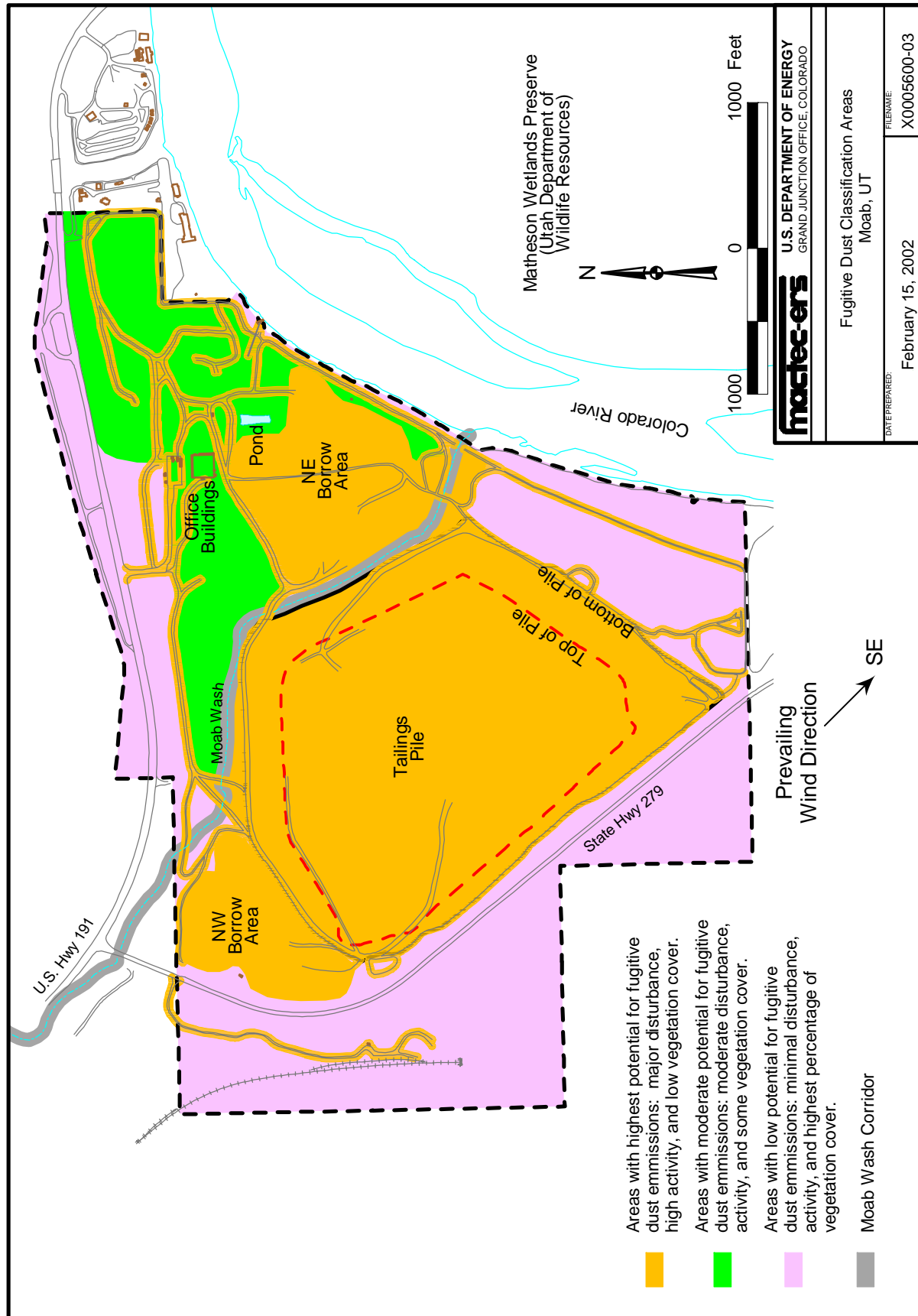


Figure 3. Location Map for the Moab Site Fugitive Dust Sources

3.0 Description of Fugitive Dust Emission Activities

A description of the on-site activities which may contribute to, or generate fugitive dust emissions at the Moab Site are discussed below:

Site Characterization—DOE is currently in the process of performing various types of environmental characterization activities at the Moab Site. These activities include: radiological characterization, surface and ground water monitoring, radon and direct gamma radiation monitoring, environmental air/particulate monitoring, meteorological monitoring, floodplain and wetlands assessment and delineation, threatened and endangered species surveys and critical habitat identification, and various engineering studies and surveys. Most of these types of activities are non-intrusive and result in little to no fugitive dust emissions. Vehicles, used to transport personnel and equipment from one location to another, may result in minimal generation of fugitive dust.

Interim and Initial Remedial Actions—DOE will be engaged in various remedial efforts to mitigate immediate threats to the environment (i.e., ground water). Specifically, an Initial Remedial Action will be initiated during the summer months of 2002 while the Interim Action may be initiated in 2003. Activities associated with these remedial actions will necessitate the use of heavy equipment for clearing and grading purposes. These actions will have the potential to generate moderate levels of fugitive dust emissions.

Site Stabilization Activities—DOE will be securing a former mill building and associated structures (i.e., pump houses, electrical breaker panels, electrical transmission and distribution systems, etc.) that were left behind by the Atlas Milling Corporation. Many of these structures were left in an unsafe condition and need to be stabilized with the increased level of activity at the site. Although the mill buildings will be eventually demolished, all structures and appurtenances will simply be secured (i.e., buildings will be locked, live utilities will be de-energized, etc.) for the present time. These activities may also include the installation or repair of site fences, installing signs and postings, and setting up various site boundaries and barricades. The stabilization activities planned for the near future will not result in significant fugitive dust emissions.

Implementation of Fugitive Dust and Storm Water Runoff Controls—DOE recognizes that mill tailings and residual contaminated soils are especially vulnerable to wind and storm runoff. In an effort to contain these contaminants and prevent their migration off-site, establishing fugitive dust and storm water runoff controls is a priority for DOE. Implementation of these controls will necessitate the use of heavy equipment to construct or strengthen berms, construct sediment retention basins, dig borrow ditches, install culverts, apply dust suppressant materials, etc.; however, fugitive emissions expected as a result of these activities are expected to be minimal.

Waste Management Activities—DOE will be performing various housekeeping activities at the site, which will include the consolidation of various materials. These activities will consist of consolidating miscellaneous fuels, drums of used oil and lubricants, and cleaning up miscellaneous spills and leaks that have accumulated near the maintenance shop over the years. For safe storage and to prevent the spread of contaminants into the environment, petroleum contaminated soils will be excavated and placed into a Best Management Practice Area (BMPA)

along with other consolidated waste materials. Any on-site wastes requiring special handling or management will be identified and addressed by DOE's waste management policy and procedures developed specifically for the Moab Project Site.

The BMPA will be a bermed temporary storage area that will be constructed with a polyethylene liner. Materials will be temporarily stored at this location until a permanent disposal option has been defined. The construction of this area and the removal and excavation of various petroleum contaminated soils will involve the use of heavy equipment. Moderate fugitive dust emissions can be expected from these activities.

Establishing Construction Office and Equipment Staging Areas—DOE is in the process of setting up construction office and support trailers, various storage facilities, a decontamination pad, and an equipment staging area. To complete this task, mobile office buildings will be set-up on-site, security fencing and gates will be installed, and utilities will be extended to the new facilities. This effort will require the use of heavy equipment; however, the duration is relatively short-term, and is not expected to result in significant fugitive dust emissions.

4.0 Description of Fugitive Dust Emission Controls On-Site

The fugitive dust emission controls to be used at the Moab Site are discussed for each of the potential source areas. All sources of fugitive dust emissions at the Moab Site are related to site activities and site conditions. The routine operation of heavy equipment (until remediation occurs) is not considered to be a significant source of emissions at this site.

4.1 High Potential Source Areas

Certain portions of the Moab Site are considered to be significant sources of fugitive dust emissions, and require more active controls than other areas. These areas are characterized by: loose, poorly consolidated sediments, poor vegetative cover, high levels of previous disturbance, high levels of future/anticipated activity or disturbance, or areas with significant residual radioactive contamination remaining. Because both the native soils and uranium mill tailings possess a sand-like texture, these materials can easily become airborne given sufficient climatic conditions (i.e., low soil moisture content, sufficient wind speeds, etc.). Consequently, DOE has designated these areas as having the highest priority in their dust control strategy. Cumulatively, these high-potential areas comprise approximately 40 percent of the total site surface area. The specific "high-potential" source areas and the planned dust controls to be implemented for each of these areas are summarized Table 1.

4.2 Moderate Potential Source Areas

Other portions of the Moab Site are considered to be moderate sources of fugitive dust emissions and will require a less aggressive approach to dust control. These areas are characterized by more stable soil conditions, a greater percentage of vegetative cover, lesser quantities of radiologically contaminated materials, and moderate levels of activity. As shown in Figure 3, these areas are found mostly in the north east and north central portions of the Moab Site. Cumulatively, these moderate-potential areas comprise approximately 20 percent of the total site surface area. A summary of the anticipated dust control measures to be used in these areas is found in Table 1.

4.3 Low Potential Source Areas

Approximately 40 percent of the site is considered to be a low potential source for fugitive dust emissions. These areas include the river bottom and wetland areas along the eastern and southern site boundaries; the Moab Wash corridor; the sandstone cliffs and rocky slopes along the southern and western site boundaries; and the Highway 191 and 279 corridors. These areas are designated as having a low potential for fugitive dust emissions because there is very little surface disturbances in these areas; some areas contain dense vegetative cover; these areas are relatively uncontaminated; and/or there is little to no activity occurring in these areas. No dust controls are planned for these areas, as shown in Table 1.

Table 1. Summary of Fugitive Dust Controls for the Moab Site

Fugitive Dust Source		Dust Controls								
		Water Truck	Sprinkler Irrigation	Vegetative Cover	Lignum Sulfate (Soil Conditioner)	WENDON (Surfactant)	Magnesium/ Calcium Chloride	Gravel	Other (Fiber Mat, Tackifier)	No Controls
High Potential Areas	Tailings Pile (Top)	X	X	X	X	X	X		X	
	Tailings Pile (Side Slopes)			X	X				X	
	Northeast Borrow Area	X		X	X					
	Northwest Borrow Area			X	X	X				
	Site Roads	X			X		X	X		
Moderate Potential Areas	North and east portions of Moab Site	X			X					
Low Potential Areas	Moab Wash Corridor									X
	River bottom/ wetland areas (south/east)									X
	Sandstone slopes/ cliffs (east/south)									X
	Highway 191 and 279 corridors (east and north)									X

4.4 Standards, Action Levels, and Response Actions

Table 2 outlines the applicable regulatory standards and action levels relative to controlling fugitive dust emissions at the Moab Site, and the appropriate response actions to be implemented once it is determined that standards or actions levels have been exceeded.

An air particulate monitoring network has been implemented at the Moab Site in accordance with DOE Order 5400.5, *Radiation Protection of the Public and Environment* and DOE's *Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance* (DOE 1991). As per the *Moab Site Project Environmental Air Monitoring Sampling and Analysis Plan* (DOE 2002), air quality monitoring data are routinely collected and reviewed to ensure compliance with DOE Orders and applicable federal and state air quality regulations. Air particulate sample locations are shown in Figure 4.

Table 2. Fugitive Dust Standards, Action Levels, and Response Actions

Standard / Site-Specific Action Level	Method of Determination	Response Action
Opacity cannot exceed 20 percent at any on-site location or source (R307–309 U.A.C.). DOE's goal at the site boundary is 0 percent opacity.	Visual observation by a Certified Opacity Reader (EPA Method 9 - Visual Determination of Opacity Emissions from Stationary Sources)	Initiate immediate dust control measures as outlined in Table 1. Cease all dust generating activities.
Sustained Wind Speeds Exceeding 20 mph (miles per hour). (EPA Method 9 - Visual Determination of Opacity Emissions from Stationary Sources)	Real time meteorological monitoring.	Monitor visible emissions; Cease all dust generating activities if necessary to maintain 20 percent opacity or less. If needed, initiate immediate dust control measures as outlined in Table 1.
Cannot exceed public exposure standards (DOE Order 5400.5)	Analysis of filters collected by continuous air samplers.	Reassess dust control plan and controls.

4.5 Best Management Practices

The following Best Management Practices (BMPs) will also be followed to help minimize and control dust emissions at the Moab Site to the greatest extent possible:

Roads—All onsite traffic will be restricted to specific designated roads. Off-road travel will only be authorized on a case-by-case basis (e.g., access to a remote monitoring well, etc.). Traffic on the tailings pile will be restricted to designated roads to minimize disturbance of previously treated/stabilized areas. Traffic speed will also be restricted to an appropriate level on all designated roads. All designated roads will be considered as high potential dust source areas, and as such, will be a priority for dust controls utilizing magnesium/calcium chloride, watering, or gravel.

Hours of Operation—This Plan will be in effect during all hours of operation at the Moab Site. During non-business hours, there will be no activities generating dust; therefore, dust control actions will be restricted to hours of operation only. However, as a best management practice, if high winds are evident at the close of a business day (or immediately prior to a weekend, holiday, etc.), site personnel should evaluate vulnerable areas and implement controls as appropriate to minimize off-hours emissions.

Use of Chemical Suppressants—Use of various chemical dust suppressants (e.g., surfactants, salt-based soil conditioners, etc.) shall be done in accordance with the recommended end-uses for those products. Site personnel shall not exceed the manufacturer recommended application rates. Material Safety Data Sheets (MSDSs) for all dust suppressant materials used at the Moab Site shall be reviewed and approved by the Environmental Services organization. Prior to application, site personnel shall determine and evaluate if the use of the dust suppressant could interfere with other site monitoring activities, or cause other harm to the environment (e.g., runoff into critical habitat for threatened or endangered fish). The MSDSs for dust suppressants to be used at the Moab Site are included in Appendix A.

End of current text

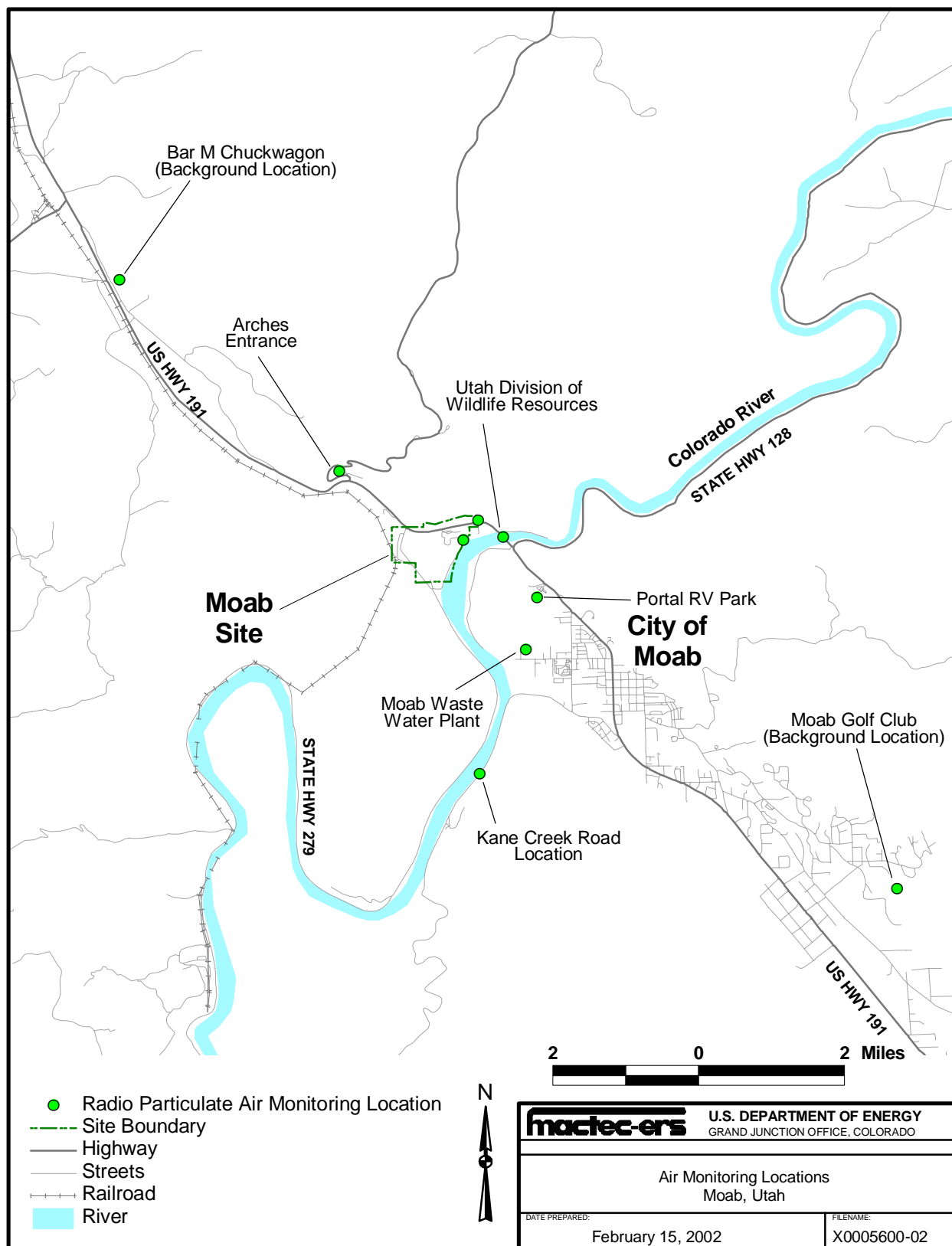


Figure 4. Air Particulate Monitoring Locations

5.0 Description of Fugitive Dust Emission Controls Off-Site

To minimize the potential for off-site releases or emissions, the following controls will also be implemented:

Decontamination and Tracking Pad—Prior to leaving designated contamination areas at the Moab Site, all vehicles and equipment will be thoroughly washed and decontaminated at a decontamination pad using a high pressure water wash. This practice should minimize the potential for any off-site tracking of sediment or contaminants.

Covered Loads—Any trucks hauling materials off-site shall be tarped and covered to minimize the loss of materials in-transit / off-site. All loads shall be inspected to ensure that they are properly covered prior to departure.

Spill Response—In the event of a spill or release of contaminated materials off-site, the spilled materials will be immediately contained and cleaned up. Emergency spill response actions are outlined in Section 13.0 of the *Moab Site Project Health and Safety Plan* (DOE 2001).

End of current text

6.0 References

Grand Junction Office, Moab Site Project Environmental Air Monitoring Sampling and Analysis Plan, February 2002, GJO-2001-274-TAR, MAC-MOA 1.6-1, Grand Junction, Colorado

———, 2001, Moab Site Project Health and Safety Plan, December 2001, GJO-2001-281-TAR, MAC-MOA 1.3 (continuously updated), Grand Junction, Colorado

U.S. Department of Energy (DOE) Order 5400.1, General Environmental Protection Program

———, DOE Order 231.1, Environment, Safety, and Health Reporting

———, DOE Order 5400.5, Radiation Protection of the Public and the Environment

———, Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance, DOE/EH-0173T, January 1991

U.S. Nuclear Regulatory Commission, Final Environmental Impact Statement Related to Reclamation of the Uranium Mill Tailings at the Atlas Site, Moab, Utah, NUREG-1531, Vol.1 C.2, March 1999, Washington, DC

Utah Administrative Code (U.A.C.), R307-205-6: Emission Standards: Fugitive Emissions and Fugitive Dust, September 2001, Salt Lake City, UT

———, R313-15-301: Standards for Protection Against Radiation, Dose Limits for Individual members of the Public, September 2001, Salt Lake City, UT

End of current text

APPENDIX A

Material Safety Data Sheets for Dust Suppressants Used at the Moab Project Site